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THOMAS G. NEWMAN,
EDITOR AND PROPRIETOR.

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☞ Those who will need anything in the line of hives, sections, crates, etc., next season, should *now* look over the stock and order them from some reliable dealer, and have them on hand when wanted for use. *Then* supply dealers may be too busy to be prompt in filling orders, and thereby cause much annoyance at the apiary. To avoid all such calamities, order now and get them where you can put your hand on them when wanted.

☞ The Chicago *Times*, on January 15, published a telegram from one of the interior counties in this State, saying that "the bee-business is growing rapidly; the stands are wintering very well." It might be more interesting to some to know how the *bees* were getting along this cold weather, rather than to get any information about the "stands," which are simply the places where the hives are put. Is there no need of more correct nomenclature—of calling things by their right names?

☞ Mr. Arthur Todd, of Philadelphia, Pa., will be at the Convention at Syracuse this week and there exhibit "a *Bacillus alvei* and a spermatozoon of a bee, mounted by Mr. Frank Cheshire, himself, and a copy of his letter with more bee-news."

Catalogues for 1885.—We have received the following:

H. F. Moeller Mfg. Co., Davenport, Iowa.
Paul L. Viallon, Bayou Goula, La.
Apiarian Supply Co., Wilton, Iowa,

☞ From an investment of $2.00, every subscriber to the Weekly BEE JOURNAL for 1885, will receive fifty-two dividends.

The Freight Tariff on Honey.

Messrs. E. France & Son, Platteville, Wis., on Jan. 8, 1885, write as follows on this subject:

At the National Convention, the subject of having the railroads make a classification for extracted honey, was introduced by the Editor of the BEE JOURNAL, and was referred to the Vice-Presidents; but we should like to ask whether they will be likely to report, or what is expected of them. Our railroads are controlled by men of justice, and all railroad officials to whom we have explained why bee-keepers want to ship extracted honey as such, instead of syrup, say that they will give it a classification if bee-keepers and shippers in general want it. Now, do not the Vice-Presidents of the National Society represent the "bee-keepers and shippers in general?" If so, will they do the wish of their constituents, and soon give us a classification?

We do not wish any one to think that we are finding fault, but we do feel that this subject is worthy of the attention of all bee-keepers. We obtained 31,000 lbs. of honey during the season of 1884, and as it has been sent as syrup, we, as some of the many bee-keepers, would like to sell honey and have credit for shipping *honey*, instead of syrup.

It is not at all likely that the Vice-Presidents (to whom this matter was referred) will make a very formidable move in this important matter, especially as they have either not all been appointed, or else such appointments have not yet been offered for publication.

As the matter was referred to such a large committee, scattered over the entire Continent, it was evidently intended that there should be no definite move made for the present—at least that would be a legitimate conclusion to arrive at.

As the editor of the BEE JOURNAL took the initiative, by writing a short letter to the Convention on the subject, we have felt it to be our duty to follow the matter up by using our influence on the Railroads to have the matter satisfactorily adjusted, and as a result, we have *new* classifications on the through lines East, of which we will give the following as a sample:

"Tariff No. 44.—Great Central Route—Blue Line; owned and operated by the Michigan Central, New York Central & Hudson River, Boston & Albany, Philadelphia & Reading, Fall Brook Coal Co. & Connections.—January 1, 1885.
"Bees in Hives—4th class.
Bee-Hives (knocked down), 3rd class.
Bee Comb, boxed, 3rd class.
Honey in glass, 1st class.
Honey in barrels or casks, 3rd class.

In order to make this classification understood, we will enumerate the rates between Chicago and New York: "First class, $1; second class, 85c.; third class, 70c.; fourth class, 60c., per 100 pounds."

It will be seen that something has been done, if not by the authorized Committee. They may be at work, too, but we have heard nothing of it. Before the present year is out, we think that there will be no cause for complaint by bee-keepers about the classification of bees, hives, honey, etc.

The International Congress.

Concerning the Meeting of the Bee-Keepers of the World, to be held at New Orleans, Feb. 24-26, 1885, Mrs. L. Harrison, of Peoria, writes as follows to the *Prairie Farmer*:

The time for holding the International Bee-Keepers' Convention has been wisely chosen, after consulting the wishes of many. The railroads are offering very low rates of fare. Many women, pining at home for a change, would be renewed in youth and vigor by the pleasure such a trip affords; the cost would be no more than that of a nice dress, which a woman of ingenuity could do without, by renovating her old ones. A dress would soon be worn out, or laid aside for another, but the rich food for thought, gleaned at the Exposition, would be fresh and bright through life. It is profitable and pleasant for people of like occupation to meet together and compare notes. The apiarian exhibit includes the products of all nations, and is worthy of careful study. New Zealand, Cuba and other islands are now sending to our shores for implements of the apiary. Ideas and thoughts may yet come from these far-off lands, that will be utilized for the benefits of bee-culture in the United States. This Exposition will be a great educator; its object-lessons are given in the products of all climes. The dullest faculties are awakened and stimulated by viewing the handiwork of other men. The cotton-plant, with its seed, bud and blossom and snowy fiber, is a study of itself, saying nothing of the nectar gathered from its bloom. Textile fabrics manufactured from it, are found the world over, and worn by all people.

Tickets to New Orleans and return, are now being sold in Chicago for $12. This presents a grand opportunity at a very small expense. We hope all who can do so will be there.

Next week we expect to be able to state that arrangements have been made at certain Hotels to keep bee-keepers at reduced rates. Meanwhile save up your "stamps" to "get there."

☞ At the World's Exposition, let it be understood, says Dr. Brown, that "all exhibits of colonies of bees and bee manipulations will *only be during the week of the Convention.* Supplies can be exhibited any time during the Exposition."

Queries & Replies.

Bee-Diarrhea in the South.

Query, No. 4.—Why is it that some of my bees have diarrhea and others have not? I have 7 colonies, and all have been fed (more or less) on granulated-sugar syrup, and some are nearly extinct on account of diarrhea, while others are not affected at all. All the queens are rearing brood plentifully, in these infected hives. My bees have been gathering honey all the winter from Japan plum. We have had no winter weather, so far; now, what do you think is the cause of this disease? What can I do to save the bees? Is the new honey the cause of the trouble? Will they come through the winter by rearing brood plentifully? What bees are most subject to diarrhea? Is there any way to stop this disease? How large should the entrance be in winter?—Iberville Par., La.

PROF. A. J. COOK replies as follows: "This is something new, and even an opinion would be dangerous. We had supposed that the South were free from such vexations. If anybody can throw light on this, it will be Mr. Viallon and other authorities in the South. I should look to the quality of the food."

MESSRS. DADANT & SON say: "There are two main causes of bee-diarrhea—thin honey and decimated colonies. The bees which have the diarrhea the most are, probably, the weakest colonies; but if they are as strong as the others, then it is the unripe honey that is the cause of it."

JAMES HEDDON replies thus: "I am still of the opinion that the cause of all bee-diarrhea is the nitrogenous food which they consume either in the shape of bee-bread or floating pollen in the honey. Of course sugar syrup cannot be expected to prevent bee-diarrhea as long as bees can avoid it and use honey in its stead. My experience is that those bees which breed the most should have the disease the worst. Had there been no new honey or pollen, and not much old pollen in the hives, no diarrhea would have resulted in the case in question. I do not know just what I should do."

G. M. DOOLITTLE answers as follows: "I do not think that bee-diarrhea is the cause of the trouble. As brood-rearing is being carried on extensively, the excrement of the young bees has been taken as implying bee-diarrhea, while the real trouble lies in something else, as poisonous honey, etc. I would give them different combs, except leaving two or three of those containing brood, and feed good sugar syrup for awhile during the day till the Japan plum is out of bloom. Young bees are the most subject to diarrhea. Bees should not have it in Louisiana, it seems to me. I use the whole width of entrance in the winter, but robbers might bother in Louisiana, if thus used."

W. Z. HUTCHINSON responds thus: "This query 'knocks me completely off of my pins.' I supposed that bees in a climate so warm that they could gather honey all winter, never perished with diarrhea. In the light of what Mr. Doolittle gives us on page 5, it would be interesting to know if the healthy colonies were also breeding. The cause may be in the food. I wish it had been mentioned if those with the most sugar stores were free from bee-diarrhea, or vice versa. I know of no way to save the bees except to change their food; give them empty, clean combs, and feed them a syrup made of pure sugar; if they are much reduced in numbers, it is doubtful whether they can be saved. If they continue to rear brood 'plentifully' all winter, they will certainly 'come through.' I do not know that one variety of bees is more susceptible than another to bee-diarrhea. I know of no way of 'stopping' diarrhea except by giving the bees a flight (and it would seem that they might have that in Louisiana), and feeding them pure cane-sugar syrup. The entrance should be as large in winter as in summer."

J. E. POND, JR. says: "In order to give an intelligent answer to this query, a number of facts more should be stated in regard to the condition, etc., of the colonies. Are the dying bees young and lately emerged from the cells? or are they old? Is there any old honey stored in the hives? If so, what is its condition? What is meant by 'gathering honey all winter?' Does that mean every day, or only at occasional intervals? While the whole matter in any case is one of uncertainty, correct answers to the above questions would give a clue to the matter, and tend to explain the cause of the trouble. My experience is that one race of bees is no more liable to bee-diarrhea than another; but that it is the very young bees which are usually affected with it."

DR. J. P. H. BROWN replies thus: "Because the conditions are not the same, bees are very rarely affected with diarrhea in the South; but it can be brought on by feeding very thin, watery sugar syrup or honey during a stress of bad weather, either rain or cold, which prevents the bees from flying. This I have as clearly demonstrated to my satisfaction as a geometrical problem. I have seen the same conditions with bees in leaky, wet and damp hives. If the bees in question must be fed, make the syrup thick, and feed inside the hive on clear, warm days when they can freely fly. The thin, watery honey, no doubt, is the exciting cause. The disease will disappear as soon as there is less rain and more sunshine. In some localities in the South, where the yellow jasmine abounds, the young bees, at about the time they take their first meals, become diseased with a sort of diarrhea caused by the poisonous honey and pollen from this vine. But as the bloom only continues for a few days, it is soon over. In the South it does not matter much as to the size of the entrance. It is better to have it contracted by tin guards to keep out mice when the weather is sufficiently cold to benumb the bees."

DR. G. L. TINKER answers thus: "As this is the first instance recorded of bee-diarrhea occuring at the extreme part of the South, to my knowledge, it is interesting, as it excludes apparently every one of the theories heretofore advanced to account for it save one, and none more conspicuously than the pollen theory. Even the strong light thrown on the subject in a recent article by Mr. Doolittle, in which late fall or winter brood-rearing is held to be a cause, does not make the matter clear as to these cases; for there was no confinement, and 'plentiful' winter brood-rearing without bad effect, cannot be an uncommon thing in many parts of the South. My belief has been that there is more than one cause for the disorder, since none of the alleged causes (some of which certainly enter as factors) can be made to account for all of the cases. The 'germ' theory may yet have a favorable hearing, and be found to account for many cases. To the ones in question it seems applicable."

G. W. DEMAREE responds as follows: "It would be quite as difficult to answer why some of the bees in question have diarrhea while others have not, as it would be to answer why some of my fowls have died with the so-called cholera while others have been entirely exempt from the disease. I think, however, the true cause is given; the bees are gathering honey and rearing brood in the winter-time, and however mild the winter, they must be subjected to exposure, and occasional confinement at a time when the nursing-bees are preparing food for the young. I can produce ascites in bees at any time when they are handling new honey and preparing food for the young, by simply setting a case of sealed honey with the bees in it, in a cool, damp cellar. One does not have to wait long to see the results. The sealed honey will condense moisture, and the damp atmosphere surrounding the bees will check exhalation from the bodies of the bees, and dropsy of the abdomen is the natural result. In this experiment we see the necessity of plenty of upward ventilation. Proper ventilation would carry off the moisture surrounding the bees, and healthful exhalation would carry off the excess of moisture in the bodies of the bees, and the grosser matter would pass off in the form of dry excreta. In your climate, when your bees cease to breed in the fall, give each colony from one thousand to two thousand square inches of air-space above the frames; this will regulate untimely breeding, and help the bees to understand that it is winter. These directions are given for Southern locations. I speak from experience. Of course you will cover the frames with quilts at the proper time in the spring.

Farmers' Call.

Thoughts in January.

MAMIE S. PADEN.

I want you, Summer! North winds blow cold,
The white snow shroudeth wood and wold;
The keen frost biteth, chill sleet doth fall,
Shivering icicles cling close to the wall.

In the drear city, trampled and trodden
Out of all whiteness, the snow lies sodden;
Darkened the frost-gleam, the icicle-glow.
Hiding the blue skies wind-driven clouds go.

This is proud Winter I hastened to greet!
Summer, O Summer, come back to me, sweet!
I will not weary, I will be true,
Summer, warm-hearted, forever, to you!

Cincinnati, O.

For the American Bee Journal.

The Cause of Bee-Diarrhea.

JAMES HEDDON.

I think that Mr. Doolittle is mistaken both in his understanding of my meaning by the words on page 773 of the BEE JOURNAL for 1884, and his ideas of the consumption of pollen by mature bees, and where it is logically proper to use the term "primary cause." I am quite confident that however true it may be that cold, confinement, breeding, or any other secondary or aggravating causes or adjuncts are needed in the production of bee-diarrhea, that if the nitrogenous pollen is the cause of the intestinal irritation, it properly ranks as the *prime cause*.

It has been always known that if the bees could fly and unload the fecal accumulations daily, such accumulations could never reach the disease-producing point; so, of course, confinement of greater or less duration is a necessary factor. We also have witnessed that a low temperature greatly favored the development of the disease—thus cold is a factor or secondary cause or adjunct, but not the primary cause. We have always noticed that breeding in confinement in some way aided the primary cause. Now, as many of us have known colonies to perish with this disease when exposed to no low temperature, to no long confinement, and where no breeding was attempted, we certainly are correct in saying that none of them are primary causes. Confinement should not be ranked or spoken of as should cold and breeding. Confinement is the opposite of frequent flights, which simply stop all proceeding of the disease, by unloading the accumulations.

While my observations have not been very extended, yet I have formed the conclusion that mature bees *do* and must eat pollen for their own physical support, whenever they are exercising; and that they do partake of it when they need not, and at their peril

We take their bee-bread and honey, which in many cases may contain a harmful amount of floating pollen, away from them, when they cannot follow their instinctive inclinations, and put in their stead an artificial food (sugar syrup), and one which they will always leave when they can find honey equally accessible to gather and store up for winter. We find as a result that our reason and experiments are safer for the life of our bees than their own instincts. This is the plan upon which we manage our breeding mares and setting hens, and the one proven to be correct.

I look upon Prof. Cook as being so situated that he should be our best authority upon this part of the subject; and on page 7 he says: "It is folly to say that mature bees do not eat pollen, unless they are breeding." This accords with the pollen theory and my former statements.

I have no hesitation in asserting that at the time of the severe loss in Indiana, as referred to by myself, and re-referred to by Mr. Doolittle on page 5, large numbers of their colonies had made no attempt at brood-rearing; and we have all witnessed cases lately where no breeding had yet been attempted. But if Mr. D. could prove that all cases of bee-diarrhea were in the presence of breeding, then if such disease grew out of the consumption of pollen, because they were using it for breeding, and the accumulations were of pollen particles, then I affirm that it is quite clear to the reason of all, that pollen would correctly be called the direct cause. If I have the blues and shoot myself, what does the coroner's jury report? "Died of blues?" No. "Came to his death by a ball from a pistol." Now I assert that when we find that where we fix a colony so that they cannot get pollen in any form, that though they are closed in a long time and exposed to a low temperature, no diarrhea develops, and when they are supplied with pollen, they have the disease in repositories where no low temperature can come, and after a confinement not one-third as long as has heretofore been passed with no disease, and then an analysis of the excreta proves it to be most all pollen, we have a right and an obligation to call the prime cause, pollen.

In my remark on page "773," I had reference only to a possible mistake in the pollen theory, and a thought in regard to the depleting effect of the law of procreation. For years I have protested against the theory of "late breeding to get young bees to winter." I am now glad to have Mr. Doolittle come out on the right side.

A neighbor who had one colony (a last season's captured swarm) recently notified me that they were dead. I went and made an examination, and found it a case of combined bee-diarrhea and starvation. There was not one drop of honey or bee-bread in the hive; many bees were deep in the cells, starvation style; and there were no signs of young bees or breeding. I examined this colony in the fall, and told the owner that they were short of stores. They then had bee-bread; but it is now all gone. What has become of it? The tops of the frames are covered with diarrhetic excreta. This excreta will, upon analysis, show pollen. I am not sure that there is not enough nitrogenous substance in pure cane-sugar syrup to cause a slight accumulation when cold forces the consumption of large quantities, and long confinement prevents any partial discharge of it; but that this food is eminently better than ordinary honey, and destined to practically settle the wintering problem, I do feel confident. My present experiments are such as I hope will settle it in my own mind.

Dowagiac, ? Mich.

Read at the Michigan Convention.

The Cause of Foul Brood.

PROF. T. J. BURRILL.

This disease is caused by the injurious operations of a minute organism properly classed among the so-called "disease-germs" or bacteria. All allied organisms are exceedingly small creatures, only to be seen with highly magnifying powers; but all are veritable plants, consisting of essentially the same chemical elements and the same organic structure as the higher and larger members of the vegetable kingdom. Some writers class the bacteria with animals, because they usually have the power of moving freely in the liquid media in which they live; but these authorities cannot be well posted upon the characteristics of low vegetable forms, for the power of spontaneous motion belongs to the most of them, as indeed it does to many of the highest plants, in one way or another.

But as plants, the bacteria are very simple in structure—an individual possessing all the capabilities of absorbing food, living, growing and reproducing its kind—being composed of a single cell, and this of very minute size. The cell has, however, a wall of cellulose (wood substance) inclosing a semi-fluid material known as protoplasm, and this is true of all living and active vegetable cells from which all plant-structures are derived. The only appendage or other structural peculiarity of the bacterium cell or individual, is in some species a very fine whip-lash-like filament, which, being capable of rapid vibration, serves as an organ of locomotion. There are no limbs, no sense organs, no special digestive apparatus, no heart, no veins, no nerves. They gain their nutrition by absorption of fluid materials through the cellulose wall, without any special opening for passage of anything in or out.

Propagation takes place by a spontaneous division of the single cell, so as to make of this, two cells. Some times the two new cells remain attached, and these may again divide, always transversely, making four cells in a chain-like row. Thus any number of cells may exist attached to each other in a thread, but each cell lives altogether independent of its neighbors, and may at any time be-

come, without injury, entirely separated. There is much difference among the species about this matter of remaining attached, and also a difference in the same kinds, according to the food-supply, mechanical agitations, etc.

Some species, and among them our organism of foul brood, have another method of reproduction, viz: by the formation of "spores" within the cell-cavity, which are little masses of condensed protoplasm surrounded by a cellulose wall, and are, therefore, little bacterium cells, which have only to increase in size to become like the parent cell.

Still these spores have physiological characteristics quite unlike the adult cell. They resist the effects of injurious conditions, as of dryness, high or low temperature, chemical poisons, etc., which destroy the organism in other forms. Thus, all species of bacteria, as well as other plants in their normal vegetating condition, are destroyed by immersion for half an hour, in water at a temperature but little above 120° Fahr., while these spores, or some of them, may be actually boiled for a much longer time without being killed.

The organism of foul brood, when not furnished with spores, is killed by simply drying thoroughly in the sun for a few days, first being mixed in sufficient water to thin well the mass in which they exist. The spores, however, live under such conditions for some months, but in my experiments they seem to finally perish in a room kept heated for human occupation, in less than six months. Freezing does not injure the spores, for I have had them develop after having been repeatedly frozen and thawed, and in some cases after an exposure to temperatures reaching 28° Fahr. below zero. But I am not sure as to the action of frost on the adult forms, not having had satisfactory material at hand when the opportunity occurred for trying.

So long as the food-supply is abundant, and the other conditions of vegetative life are favorable, spore-formation does not occur in this species. When, however, the affected larval mass sinks down to the bottom of the honey-comb cell, there is little to be found of the organism but the spores. Cultivated in beef broth, in which the minute plant flourishes as well as in the bee-larvæ, the vegetative stage lasts under the temperature of summer weather (75° to 90° Fahr.) from two to seven days, *i. e.*, spore-formation does not sooner begin. The length of time, however, depends on the quantity of the food-material, and my trials were with diluted broth, and in small quantities ranging from about one-fifth to one ounce, the inoculation being made with a very minute amount of the material containing the bacteria, and, therefore, but few of the latter. Had many been at first introduced, I have no doubt that spores would have been sooner found.

In the bee-larvæ, nothing so definite can now be stated upon this point, but the time seems to be longer. Spores are not found while the larva keeps its proper shape, and not until it sinks down into a jelly-like mass at the bottom of the cell. There is, by this time, a very offensive odor, due, probably, to the gases eliminated by the ferment action of this same organism, yet it does not seem to be putrefactive in its nature.

It ought to be thoroughly understood that no putrefaction or decomposition can take place even in so susceptible a thing as a young, soft-bodied larva, without the intervention of living organisms of some kind. It is, of course, known that young brood dies upon being too much chilled, and decomposition ensues, just as a bit of fresh meat kept in a warm temperature soon becomes putrid. But in both cases the putrefactive changes are produced by living agents, instead of spontaneously arising in the dead organic matter. There are, indeed, as many bacteria in a putrid bee-larva killed by cold, as in one destroyed by the organism of foul brood. Others have said, and I think that it is true, that the odor of foul brood can be detected and determined as different from that of putrefaction after death from other causes.

Sometimes it is certain that the usual putrefactive agents (species of bacteria quite distinct from, though of the same structure and general characteristics as that of foul brood) are found in larvæ dead of foul brood; but knowing well the ubiquitous character of these, I have been surprised to find the greater number of foul-brood specimens wholly free from the ordinary putrefactive bacteria, so that one can with much reliance, gain pure cultures of the foul-brood agent from the dead larvæ. But by taking advantage of the fact that the most common of the putrefactive bacteria do not form spores, one can, by heating the gelatinous material left of a larva dead of foul brood, be quite certain of killing everything except the bacteria of the disease.

Does the organism of foul brood develop elsewhere than in the brood of bees? This is a very important question in the scientific study of the disease, and in our methods of fighting the malady. It might even be necessary to settle the point before a well informed court of justice could properly decide a case. Only a few days ago I was appealed to for any possible help in tracing the introduction of foul brood in an apiary known to have been free from it during many years before. One colony of bees had been secured from a distance, and some months afterward the disease was found in this colony as well as in two or three others. None had been previously known in the neighborhood. Upon inquiry it was ascertained that foul brood had existed in the apiary whence the colony came, but the owner believed it was entirely free from the trouble at the time, and had been for the two years preceding. An examination failed to reveal any suspicion of the disease. The man receiving the colony was certain it was diseased at the time of purchase · the one selling it, was as certain to the contrary.

Now while the evidence at my command goes to show that foul brood usually comes from foul brood, it seems quite possible that in some cases a different source must be sought. There certainly is no difficulty in keeping the foul brood organism through many generations, and lasting through months of time, rapidly multiplying all the time, in beef broth. These thus grown in broth have their characteristic effects when transferred to sound brood.

If this result can be gained artificially, is it not plausible that under some circumstances in nature the organism may live and grow somewhere else than in the larvæ of bees? I have no further positive information upon this point, but there are indications that epidemics among other insects may be sometimes due to the same organism. Indeed, I should not be surprised to find that the scourge of the silkworm, called by the French *flacherie*, is really and truly the same offender; and what is more, we have among our wild native caterpillars, sweeping epidemics caused by the same or a closely similar organism.

During the summer of 1883, the European cabbage-worm (*Pieris rapæ*) died throughout central Illinois in such numbers that their limp forms on the leaves attracted all but universal attention, and the numbers were so decimated that in the early part of last summer, scarcely a butterfly or worm was to be found, nor did they become numerous again during the season. If it should be shown that the cause of this destruction was really the same organism as that found in diseased bees, it would still remain to be proved that they could be transferred through the natural working of affairs, to the bee-hives, from the cabbage fields.

In the absence of knowledge, we may speculate this way: The butterflies lay their eggs upon the cabbage, and may readily come in contact with the dead or dying caterpillars (worms). They also visit flowers to sip the nectar, and now may be followed by bees, which we can see may sometimes carry home, upon this supposition, the deadly invisible foe.

All this is supposition; but does not the possibility of making such speculation suggest the need of further facts? The foul brood question has by no means been answered; for there are scores of queries as pertinent as those here suggested, upon which we have no real knowledge. My own experiments and observations, begun a year ago, have been too little to call a commencement, and unless I am mistaken, aside from such observations as it has been possible for keen-sighted and diligent practical apiarists to make, no one in America has carefully studied the disease from the "germ" stand-point. Two things have hindered my own work, viz: want of time, other things taking precedence, and the necessity of caging the experimental bees to avoid contaminating the bees of the neighborhood. Doubtless Prof. Forbes,

State Entomologist for Illinois, with his well trained assistants, can be induced to undertake the matter, and, if so, there is every reason to hope that rapid progress will be made.

It gives me pleasure to acknowledge that since my proposed investigation of the subject of foul brood became known, many kind words of interest and encouragements have been received, and some offers of practical aid. In both ways I have none to thank more heartily than the efficient Secretary of the Michigan State Bee-Keepers' Association.

Champaign, Ills.

For the American Bee Journal.

A Would-be Discoverer.

JAS. M'NEILL.

On page 440 of the last volume of *Gleanings*, Rev. W. F. Clarke heads a lengthy article in which he announces his assumed discovery of the hibernation of bees, with "The wintering difficulty solved at last. Hoorah!" and on page 438 of the BEE JOURNAL for 1884, in commenting on the title of a corresponding article, he says: "But there is no use in giving a small name to a big idea, which I firmly believe the one I have struck, to be. For several years it has been impressed upon my mind that I should some day make a great discovery in bee-keeping. . . . . I find it very difficult to write with that calm dignity and equanimity which befit a literary man. In fact my hand quivers with a tremulous excitement, so that, as the Editor can plainly see, I do not write with my usual steady chirography. I feel very much as Galileo did when the true theory of the universe dawned upon him."

Such an introduction as this, to the sober facts of his discovery, is naturally calculated to arrest the attention of the bee-keeping world, and hold it in bristling expectation. For we very naturally suppose that, in the face of all that has been written on the wintering problem—in the face of the fact that a score of worthy investigators have thought that they had solved it, till the crucial test of experience had disproved their theories,—he who would thus announce his discovery would be sure of his position beyond a peradventure; and that it would be the result of careful and prolonged experiments in which observations, tested and re-tested, invariably pointed to the same result.

But what do we find? Simply this: That while lying on his bed one night, racked with rheumatic pains, his mind went back to the days of his youth, when he was engaged in clearing up a bush farm. In the midst of his reverie, the question occurred to him: "Do you ever remember cutting down a tree in which a colony of bees had been winter-killed?" and immediately came the response—"Never." Then and there he came to the conclusion that the true principle of wintering bees lay hidden in a hollow-tree trunk. Then the word "hibernation" flashed across his mental vision, and his grand discovery was made.

What of the alleged fact which led to this discovery that bees winter well in a tree trunk? The testimony of many bee-keepers is that a hollow-tree trunk gives no more assurance of safe wintering to a colony of bees than an ordinary bee-hive. What of the alleged fact that bees hibernate? He quotes instances where quietness, small consumption of honey, and excellent condition of bees in the spring would favor the opinion that the dormant state is the natural condition of bees in winter; but he furnished no demonstrable proof that bees really do hibernate.

But again: Suppose it be proved beyond a peradventure that bees hibernate, how will the knowledge of this fact help us to solve the wintering problem? Have we not still to learn how to make them hibernate? There is no point in the wintering difficulty upon which bee-keepers are so generally agreed as upon the importance of quietness. While the cellar, the clamp, chaff-packing, upward ventilation, downward ventilation, no pollen, etc., have each their champions who have contended bravely for their particular theory, the end and aim of all the different methods of wintering bees, is to make and keep them quiet during the period when they are confined to the hive. Now, in my opinion, it does not make an iota of difference whether you call this much-desired winter-condition of bees quietness or hibernation, the same difficulties are encountered in discovering the essential conditions of success in either case.

Mr. Clarke thinks that a shaft of air beneath the cluster is the essential condition of successful hibernation. This opinion may, or it may not, be true. It has yet to stand the test of repeated and extensive experiment. It may supply a link in the chain of the essential condition, or it may be discarded as unimportant. If it shall prove, as Mr. Clarke thinks it is, the Ariadnean clew to the wintering difficulty, it will then be time enough for him to write in the grandiloquent strain in which he has already written; and though we might still smile at his inflated enthusiasm, we would accord him his due meed of praise, and hail him as a great discoverer.

Hudson, N. Y.

For the American Bee Journal.

Correct Apicultural Nomenclature.

O. O. POPPLETON.

On page 50 of Prof. Phin's "Dictionary of Practical Apiculture," in his definition of the term "New Idea Hive," he gives what should essentially have been given under the term, "Single-Story Hive," or "Long Hive," either of which are much more proper than the terms which he gives. I do not understand that the term, "New Idea Hive," has ever been properly used to mean simply all forms of long, single-story hives, but only one form of them, that made by Gen. Adair, of Kentucky.

What Gen. Adair claimed as a "New Idea," and for which he named the hive, was not its length, but the principle of having the brood-nest in one end of his hive, with the store-combs or surplus-arrangements between the brood and the entrance of the hive, so the bees were obliged to pass through or around the surplus-arrangement whenever they entered the hive. The terms "New Idea Hives," and "Long Idea Hives" are unquestionably used incorrectly, and a dictionary should only use them to call attention to their incorrect use, and to give the correct terms in their place.

Mr. Phin, in his introduction, commences with the following truthful and timely words: "Not only is our language governed by our ideas, but our ideas, thoughts and reasoning are too often governed by our language." This being true, how necessary is it that no implement or anything else used in our business should be called by names which give no idea whatever of their real uses, especially, of all books, in a standard dictionary.

Williamstown, Iowa.

For the American Bee Journal.

Champlain Valley, Vt., Convention.

The Champlain Valley Bee-Keepers' Association held its annual meeting in Middlebury, Vt., on Thursday, Jan. 8, 1885. It was called to order by President H. L. Leonard, and the minutes of the last annual meeting were read and adopted.

A committee of three was appointed to propose questions for discussion. The following officers were elected for the ensuing year: President, H. L. Leonard, Brandon, Vt.; Vice-President, V. V. Blackmer, Orwell; Secretary, R. H. Holmes, Bridport; and Treasurer, J. E. Crane, Middlebury.

Eleven of the members present reported 1,409 colonies, spring count, 1,634 fall count, and 29,708 pounds of comb honey, and 2,200 pounds of extracted honey, as last season's crop.

The following question was then discussed: "What is the best management to prevent swarming?"

The President said that he had succeeded in preventing swarming by cutting out all the queen-cells; but his experience in this had been limited to one season, and he did not know as it would always prove successful.

Mr. V. V. Blackmer said that he had succeeded in returning second-swarms, and in his experience they had all staid after cutting out all the queen-cells.

This question was then asked: "What is the first cause of swarming?" Mr. J. E. Crane thought that it was the impulse to increase, which is implanted in all creatures.

"Is fall-gathered honey suitable for wintering bees?"

Mr. J. E. Crane said that it had been stated that honey which would not crystallize was not good for bees; but it did not follow that it was good if it did crystallize.

It was asked if cider was injurious. V. V. Blackmer said that his bees had worked largely upon it during the past fall, and he had his fears as to what the result might be. Mr. A. E. Manum thought that it was not as injurious as many supposed. Mr R. A. Damon said that bees might winter on buckwheat honey, but he did not consider it as good as earlier-gathered honey.

Mr. A. E. Manum said, of itself, any kind of honey that we get here in Vermont is not injurious to bees, but the injury comes from a mixture. He had had some experience, but was not yet fully decided. He was quite strong in the belief that cider, grape juice, or honey from goldenrod, heart's-ease or buckwheat, etc., either one of which might not produce bad results of itself, but the mixture forms a compound which is undesirable. He thought that bees would winter on mixed honey provided they often had a flight. For wintering bees, he would prefer to feed sugar syrup, and he thought that it was safer to winter bees on than honey, and he would feed honey in the spring, as there was something lacking in sugar which was required for brood-rearing. He also said that pollen is a good thing, and that he liked to see a good deal of it in his hives in the fall, and never had too much of it.

"What is the best plan for rearing queens?"

Mr. V. V. Blackmer said that the best queens are reared during the swarming impulse.

Mr. A. E. Manum said that he did not get enough queen-cells in this way, and was obliged to force. He was satisfied that he could rear as good queens in this way as any. He rears many of his queens in nuclei, and thinks that a nucleus is as good as a full colony, but he would have it crowded with bees as much as a full colony, in proportion to its size. He would not take eggs from queens, not thoroughly tested, to rear queen-cells.

The President asked if any present had had experience in fertilizing queens from drone-larvæ. None had; but all were of the opinion that it was not practicable.

"Is the traffic in dollar-queens beneficial to the bee-business?"

Mr. H. Briton had purchased 16 dollar-queens of one breeder, and all that he had succeeded in saving proved to be good. He had lost some.

Mr. V. V. Blackmer had bought 26 dollar-queens of another breeder, and got some 2 or 3 out of the lot that were fair; some were hybrids, and some were short-lived. He paid $3 for one tested queen which proved to be worth more than all the rest. He did not believe that, as a rule, it would pay a man to rear dollar-queens, and it certainly would not pay the man who buys.

Mr. J. E. Crane said that it was with this as with all other kinds of business—there were two sides to the question. He thought that it depended much on the queen-breeder. He did not see why it should not be all right to rear and sell dollar-queens, provided that they are what they are represented to be.

Adjourned till the third Thursday in January, 1886. The Secretary was instructed to notify bee-keepers, and others interested, of the time and place of meeting.

R. H. HOLMES, *Sec.*
H. L. LEONARD, *Pres.*

For the American Bee Journal

Bee-Poison and its Effects.

JOS. M. WISMER.

Being an enthusiastic bee-keeper, and believing that it is the duty of all bee-keepers to give to others the benefit of their experience, I cheerfully comply with Dr. Tinker's request on page 714 of the BEE JOURNAL for 1884. He says: "I would ask Mr. Wismer whether he thinks that the venom of a bee-sting and the acid secreted in the stomach of the bee, are identical. If the Doctor will carefully read my article, on page 635 of the same volume, demonstrating my experience with honey and its effects, he will observe that my proposition does not convey the idea as being identical.

It probably will not be amiss to give a few items to illustrate that the scent or odor emitted by the bees under manipulation, is not an acid secreted in their stomachs. The "Illustrated Encyclopedia of Animated Nature" teaches me that some animals are equipped with a two-fold element to defend themselves when disturbed. The first ingredient is utilized to notify its approximation, and the second is destined to demoralize its indefatigable enemies; to this family the bees belong.

On page 485 of Volume XVIII, Mr. Heddon says: "The first breath of bee-poison that I inhaled on my return, was followed by all the former symptoms, seemingly in an increased degree, and in ten minutes my throat turned red and clearly showed severe irritation." My nasal organ being affected with catarrh, and breathing being rather difficult and unsatisfactory, I am compelled to do all my breathing directly through my mouth, and therefrom I have experienced the same difficulty as Mr. Heddon did, with a sharp, pungent taste being rather disagreeable to the respiratory organs, whereby asthma would be effected.

Again, Mr. H. says: "All apiarists know that often when a maddened, threatening bee flits around one's head, she generally discharges her poison into the air. It is recognized by the nasal organ only." I do not think that Mr. H. wishes to be understood that this discharge or bee-poison is an acid secreted in the stomach of the honey-bee—a discharge produced by the bee to saturate the air with a mild poison, only perceptible by those who have keen or enfeebled breathing organs. In opening the hive to examine the condition of the bees, I have at times met discharges emitted through the tops of the frames quite offensive to the breathing organ, and producing mild asthma. Being conceded by many bee-keepers that the black or common German bees are more irritable than the Italians, the consequences are that this discharge of bee-poison is more readily found among the blacks.

I have evidence enough to prove that honey will be permeated with this bee-poison, or formic acid, being confined in the hive after manipulation had taken place. It has been shown that honey ripened by the bees will contain enough of this so-called formic acid to produce severe colicky pains when eaten by some people, and cases are known where it produced death. Honey can be procured from the bees without a particle of this formic acid, and eaten with safety.

The Doctor says that on opening a hive on a cool day, numbers of bees will elevate and protrude their stings, at the end of which may be seen a tiny drop of the poison. What becomes of this tiny drop of poison when the hive is closed? Can the bees retain this poison, or does it evaporate? There is quite a difference in this so-called bee-poison which exists in the honey or on the end of the bee-sting, the first being taken internally, and the second, externally, or under the skin in direct contact with the blood circulation.

Upon showing my family physician Mr. Little's article, on page 747 of the BEE JOURNAL for 1884, concerning the death of Mrs. Sturdevant, who died from the effects of a bee-sting, he coincided with Dr. Horton's ideas as to the manner in which the formic acid had been taken into her system. He further said that the sting of a bee, penetrating the skin of its victim, becomes a perfect hypodermic syringe. Here is where the trouble arises in extricating the stinger, by taking it with the sac of poison between the thumb and finger to extract the stinger, and leaving the poison which the sac contained just where the bee had put it.

Jordan Station, Ont.

Read at the Michigan Convention.

Apicultural Notes for the Year.

PROF. A. J. COOK.

Apiculture, like the sciences, has so many able workers, who are at the same time investigators, that its growth or progress may be actually seen day by day as the weeks go by. It is a question if any pursuit—certainly manual-labor pursuit—can boast of such rapid advance. Each year, and often each month, marks stepping-stones by which the art reaches a higher plane.

With so many investigators—the most of whom are entirely without scientific training—we must expect many faulty generalizations and crude theories to creep into our apiarian literature and discussions. So that the wise apiarist will not accept every statement. It is specially necessary for the bee-keeper to paraphrase John's exhortation thus for his practical guidance: Beloved, believe not

every statement or theory, but try the statements whether they be born of truth, for many false views are pushed out into the world. Paul's rule, we should make literally our own: "Prove all things; hold fast that which is good."

Many farmers, as they see the luxuriant fire-weed spring up in the very track of the burning brush-heap, are sure that spontaneous generation is a law of nature. Ignorance is often a strong pillar on which faith undoubting stands. The doctrine of the metempsychosis is no more unscientific than that wheat will turn to chess; yet many a husbandman has no doubts of the frequent occurrence of the latter. Science has long shown the utter fallacy of these statements, and will have to keep battling, for long years before all will see the truth. So in bee-keeping. It will take years to persuade all bee-keepers that the so-called honey-dew does not fall like the gentle rain from heaven, yet that it never so falls, is very certain.

That bees can change worker larvæ to those of drones, is entirely beyond the possibilities even of the very skillful workers; yet I doubt not, if our editors will publish such statements, we shall read them yearly in our apiarian papers. The presence of the spermatozoa or sperm-cells in the eggs insures a female bee. These sperm-cells are so exceedingly minute that it takes a most excellent magnifier to see them at all. We must believe then that as good and wonderful a manipulator as the worker-bee is, to remove these infinitesimal sperm-cells, is quite beyond its powers. It is possible for unfecundated eggs to be interspersed among fecundated ones in the cells, and to be placed in the small or worker-cells, and such must be the explanation when we find drone-brood among worker-brood, even if in the worker cells.

Even more absurd is the notion that crushed tissue of a drone larva may fecundate a queen-bee. Surely, such statements are quite unworthy a place in any of our bee-periodicals.

The new facts, if they be facts, recently developed by Mr. Frank Cheshire, of England, in reference to foul brood, are certainly very interesting. Mr. Cheshire claims to have found the specific cause of foul brood in a kind of bacterium which he calls *Bacillus alvei*. He thinks that these are not confined to the brood, but swarm everywhere in the adult bees, queen, drones and workers, and even in the sperm-cells of the drones and ova of the queen. He thus objects to the term "foul brood," as he believes old bees die from this fungoid affection.

He thinks that honey probably does not contain the spores, but that they —the spores—are conveyed on the feet and antennæ of the bees. Lastly he suggests phenol, as a specific to be used as the cure of the malady. He is not the first to suggest phenol, nor is the idea of the molting of the lining of the alimentary canal with the skin of the larva, original with him, as it is a fact well known to every entomologist.

Now, while we should be very glad of this elaborate investigation by Mr. Cheshire, we may well pause before we join in his cry of "Eureka!" If the adult bees are attacked with the *bacillus alvei*, why do we get none of the characteristic odor from them? and how are we to explain the cure by partial starvation which has been so successful in the hands of Messrs. Jones, Mason, and many others. These well authenticated cases of cure can be explained only on the ground that the active spores are confined to the honey, and that the adult bees are not victims of the malady, and can only convey it in the honey. Again, why is it that so many fail with phenol? While we may all hope much from all such careful research, we must yet wonder whether the bottom-facts are reached in this matter of "foul brood."

The pollen controversy still rages. There can be very little doubt but that bees are better off with no pollen during winter, especially if they are to be confined in their hives for long periods. The argument that bees are likely to be the best judges of a proper diet, counts for nothing in these days of intemperance. I once heard a prominent physiologist assert that no small amount of sickness and disease was caused by hearty dinners on Sunday. How much more likely to suffer would bees be if they take full rations of hearty nitrogenous food during the enforced quiesence of our long, rigorous winters.

In their native climate, bees can fly every month of the year; here they are forced to very different habits, and it is not at all unlikely that these new conditions demand new food-habits. I fully believe that with just the right temperature, bees will eat very little, will remain very quiet, and be very sure to winter well. I also think that if this temperature is not maintained, in which case the bees will become more or less active, then it were far better to have no pollen in the hive.

For many years we have given pollen to some colonies and withheld it from others. Nearly every year has sustained in the sequel the opinion expressed above. The present winter we have given one-third of our colonies large quantities of pollen, the remainder almost none. Should our cellar become unduly warm, or very chilly, I shall surely expect the colonies having the pollen to suffer. Such hearty food and rest are not safe companions. The pollen theory is *not* unscientific, but is just what our physiological knowledge in reference to food would lead us to propose. If bees can fly often, pollen will not effect them illy; if they can be kept very quiet, I think that the same is true; as in this case they would eat little or no pollen. But as it is very difficult to so guage the temperature as to secure either of these conditions, I am sure that we are safer with no pollen in the hives. I would remove all pollen in the fall, and return the frames containing it to the hive as soon as I wished breeding to commence in the spring—about April 10. Had I a cellar just to my liking, I should have very little fear, even if every frame contained pollen.

The coming bee has been often discussed, and if we are all to reach after it, we must know what it is to be. As I have shown in an article which recently appeared in the AMERICAN BEE JOURNAL, the coming bee will have all the good points, and many of these improved, possessed by each of our separate races, and so of course some of the blood of all our races that have superior merits. There is no objection to cross-breeding bees, such as is met in cross-breeding cattle, horses and sheep. Nor is the difficulty of selecting the males in mating any practical estoppel, though it may be a hindrance to the quick securing of the "bee of the future." With our present knowledge and machinery, we can secure drones for mating from our choicest colonies, and while we might reach results sooner, could we know the very best drones in any hive and use them, we shall do nearly as well by precluding the flight of all drones from any but the best colonies. That even the best families of any colony give an occasional weakling among its male offspring, only shows that we must work longer for the coming bee. That we have anything like perfection now, is very doubtful. By judicious crossing and careful selection we shall surely reach results that shall be to the bee of the day, what the sleek, short-horn is to the lean Texan kine of the Western plains.

I might speak of separators, of small sections, and reversible frames, but they will each and all be discussed by abler and more experienced persons. So I will close this paper by some remarks on a very important topic. I refer to the securing of correct statistics.

It is probable that no one thing will so aid us in marketing our honey product, as accurate, reliable statistics. I expect that Mr. Hewit will show us how we can secure, through the crop reports of the Secretary of State, twice each year, just such facts as each bee-keeper desires to know. Now, while I am in favor of our pushing vehemently such action as he may advise looking towards needed legislation to accomplish the most, I am not in favor of stopping there. Why can we not use such funds as we shall obtain at this meeting, in securing a kind of independent report of our own? Why may not the Secretary of this Society secure a reporter in each county, an able bee-keeper who will promise to report the probable crop, each October? He can prepare blanks so that this can be made as easy as possible. Then, as soon as he gets the reports, let him compile them and send his report to the bee-periodicals. At present this could only give us the probable crop, as compared with an average; but soon we might hope that it would grow into a knowledge of the amount of honey and number of colonies of bees. From these two efforts I feel great hopes that Michigan may be one of the first States to prepare such statistical facts as we all desire.

Agricultural College, Mich.

For the American Bee Journal.

Getting Bees out of Honey-Boxes.

J. H. ANDRE.

It used to be a source of great trouble to me to get the bees out of honey-boxes, especially those that were used on the old-fashioned box-hives, until I hit upon the following:

Take any ordinary box about 3 feet long and 20 inches wide, and put glass in the bottom; it need not be all glass, 2 or 3 small panes will do, but it will be better if it extends almost the entire length in the centre of the bottom of the box. Any odd pieces of glass may be used. Sink the glass a little into the bottom of the box, and now nail strips of lath inside on the bottom, edgewise about 4 inches apart and crosswise of the box. Make a neat-fitting cover without hinges, and then put the box up 2 feet high by resting its ends on something, or legs may be put under it. Put the boxes or crates of honey in on the strips of lath, holes downward, when the bees will see the light and crawl down. In an hour or so, lift the cover and they will rush for the hive. Lifting the cover at two or three times will nearly clean the boxes, and robbers cannot get in.

Lockwood, N. Y.

Prairie Farmer.

Notes on Wintering Bees.

MRS. L. HARRISON.

This very changeable winter, with the mercury playing around from zero to temperate, necessitates care on the part of those who have bees stored in cellars or special repositories. A very high or very low temperature causes them to break cluster, and throws them in a commotion. This undue excitement is promotive of disease, as the bees gorge themselves with honey and pollen, when they have no opportunity for a cleansing flight. If necessary, ventilators have been provided, as they ought to have been, and are opened at night, the temperature will be kept down sufficiently. If opening the ventilators does not quiet them, then recourse must be had to carrying in ice, until the temperature is lowered so much that the bees will cluster and hibernate.

This winter, when I put my bees in the cellar, I promised them as pure air as I would want, if living down there myself. With this end in view, as bees are continually dying, we spread down on the cellar-bottom in the interstices between the hives, propolized muslin, which had been discarded for honey-boards, being impervious to air. This stiff muslin is taken up occasionally, and the dead bees emptied into a pail, and carried out to the compost heap, or the muslin is carried out, carefully shaken and then put down again. Dead bees generate dampness, and when many are deposited together, the effluvia arising from their decay is disagreeable and deadly. Sometimes the bees are thirsty while in the cellar, keeping up an uproar until drink is given them. This can be conveyed to them by means of wet cloths or sponges placed against the entrances of the hives.

It is best to keep an eye on bees wintering out-of-doors, lest snow or rain gain an entrance through leaky roofs or otherwise. If entrances to hives are large enough to admit mice, they will enter and make sad havoc with both bees and comb. Dead bees and other *debris* must not be allowed to accumulate and thus choke up the entrance, but it must be removed with a bent wire or a small twig. If any hives are found containing dead colonies, lift the frames out and shake off the bees; those that remain sticking in she comb will dry up and do no harm, but if left to decay in the cluster, it will injure the comb. This comb will be valuable for swarms during another season, when the bees will quickly remove the dead without injuring it. Choose a mild day for handling combs, for if they are cold they will break from the frames.

Peoria, Ills.

For the American Bee Journal.

Langstroth Hives—Season of 1884.

F. R. MANNING.

I have an apiary of 31 colonies, and I use several styles of hives, but I like the double-portico Langstroth hive the best, for two reasons: First, in the spring, when the bees rob, the portico protects the colony when they come out to fight the robbers. When there is no portico on the hive, the wind will sweep the bees away and give the robbers a better chance to get in. Second, the double-portico hive has room for 7 two-pound sections more than the one-portico Langstroth hive.

I was running my apiary for comb honey during the last summer, but I think that I will try extracting next summer. I obtained an average of 54 pounds per colony, spring count, the past season. Some of the colonies were very weak, and did not produce much honey. The increase was 29 swarms. We had a good crop of white clover, and when that came, my bees were in good condition, and had plenty of honey in the brood-chambers. I wintered them in the cellar last winter, and they are now wintering there again. I examined them to-day, and found them in good condition with but very few bees on the cellar bottom.

My bees are nearly all hybrids. I have some blacks, but I am going to dispose of them in the spring and secure ten good, strong colonies of pure Italian bees. I have now taken the BEE JOURNAL one year, and would not do without it for the price of a colony of bees. I sold some bees last fall, and disposed of all my honey at my house, but did not have half enough to supply the demand; I got 15 and 20 cents per pound. The fall crop was short, but my bees gathered a good supply for winter.

Reynolds, Ills., Jan. 8, 1885.

For the American Bee Journal.

Pleurisy-Root as a Honey-Plant.

J. R. BAKER.

Mr. Heddon speaks very highly of pleurisy-root as a honey-plant. Some three or four years ago I became convinced of the value of this plant as a honey-producer, and I sent one of the flowers to the BEE JOURNAL to find out its name. Prof. Burrill informed us that it was a member of the *Asclepias* family and is commonly known as pleurisy-root and butterfly-weed. At the same time I sent a specimen of a small, yellow flower which grows so abundant here, and on the same kind of soil that the butterfly-weed flourishes, and Prof. Burrill told us that it was wild sensitive-plant.

The pleurisy-root is very plentiful here; but I never saw it grow to any amount only on the very light, sandy soil. That it would grow and do well on good rich soil, I am not prepared to deny; but I am sure that, naturally, it does not seek such. The flower is very handsome, varying in color from orange to rich red. The plant stools out very heavily, and the flowers are freighted with bees constantly. I never knew the little busy fellows to leave this bloom for any other. I am almost certain that this valuable honey-plant must be found almost anywhere where there is a light, sandy soil. I shall try and domesticate the plant and see how kindly it will take to good ground. I shall be pleased to report my success through the BEE JOURNAL.

Prof. Burrill spoke very highly of both the pleurisy-root and the sensitive-plant as honey-producers. I hope all bee-keepers will take pains to report all good honey-plants in their immediate vicinity; and if some one in Texas will send me a specimen of the Texas horse-mint, in its season, I shall esteem it a favor. I wish Prof. Cook would tell us the difference in Texas horse-mint and our wild burgamot or *monarda fistulosa*.

Keithsburg, Ills.

Bees in a Church in England.

A correspondent writes: "An extraordinary discovery has just been made in the parish church at Stourmouth, near Wingham, Kent, a nest of bees being uncovered in the roof of the chancel. Its existence was known to the officials, but no idea seems to have been formed as to its size. The "living" has been held for many years by the Rev. Mr. Drake. Some time ago it came to his knowledge that a swarm had settled in the sacred building, but he would never allow their retreat to be disturbed. A few months ago, however, the Vicar died, and as the church had to undergo general repair, the bees no longer were allowed to remain in possession of their quarters. They were destroyed by fumigation, and on the honey being taken, there was found to be nearly 224 lbs. of it. It is stated that during hot weather the honey used to drop down on the floor."

Local Convention Directory.

Time and place of Meeting.

1885.

Jan. 20, 21.—N. W. Illinois, at Freeport, Ills. Jonathan Stewart, Sec.

Jan. 21—23.—Northeastern, at Syracuse, N. Y. Geo. W. House, Sec.

Jan. 22, 23.—Indiana State, at Indianapolis, Ind. Frank L. Dougherty, Sec.

Jan. 24.—Lake Shore, N. Y., at Fredonia, N. Y. John Benedict, Sec.

Jan. 27.—Province of Quebec, at Montreal, Can. S. B. La Montague, Sec., Montreal, Can.

Jan. 27.—Cortland Union, at Cortland, N. Y. M. G. Darby, Sec., Homer, N. Y.

Feb. 4.—N. E. Michigan, at Vassar, Mich. W. Z. Hutchinson, Sec., Rogersville, Mich.

Feb. 11.—Seneca Co., N. Y., at Ovid, N. Y. Ira Wilson, Sec., Ovid, N. Y.

Feb. 24-26.—International, at New Orleans, La.

May 4.—Linwood, Wis., at Rock Elm Centre, Wis. B. Thomson, Sec., Waverly, Wis.

May 28.—N. Mich. Picnic, near McBride, Mich. F. A. Palmer, Sec., McBride, Mich.

June 10.—Willamette Valley, at La Fayette, Oreg. E. J. Hadley, Sec.

☞ In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

SELECTIONS FROM OUR LETTER BOX

☞ J. W. Johnson, Lock Spring, Mo., on Jan. 11, 1885, writes as follows:

I have 50 colonies of bees in good condition. They had a flight on Jan. 8, being the first that they have had for 30 or 40 days. The past season was a poor one here, 42 pounds of comb honey being the most that I obtained from any one colony; from some colonies I got none. I hope that the next season may be better for bee-keepers than the past was.

☞ A. W. Osburn, of Cuba, on Jan. 8, 1885, writes thus concerning a sample of Cuban honey:

I send you by this mail a sample of Campanilla or bell-flower honey, which please sample and tell us how you like it. The honey is just as it was extracted from the combs, and is not evaporated nor selected.

[The honey is very clear and white, but it lacks "body," and though it is sweet, it does not quite suit our palate as to taste; we much prefer honey from white or sweet clover.—ED.]

☞ J. Raymond Ball (9—27), Knowlton, Quebec, on Dec. 31, 1884, reports as follows:

The past season here was a very poor one for honey and bees, there having been only about one-third of a crop, as near as I can find out. One man here with 115 colonies took considerable less honey than he did during the season previous with only 53 colonies. Bee-keeping in this Province is getting to be quite an industry; numbers have gone into the business since the introduction of the movable-frame hive, three or four years ago, and they are meeting with fair success. I commenced the season with 9 colonies, all in box-hives, transferred them into the Jones' hives, and increased them to 24 colonies. I sold 1 colony, bought 2, and obtained 2 from a neighbor who was going to sulphur them, and now I have 27, and have taken 400 pounds of honey, mostly extracted. It is all sold, and has netted me 13 cents per pound. My bees did well through May and June, but in July they did nothing, as it rained about every day. Basswood blossomed on July 20, but the bees gathered honey from it only 3 or 4 days. There was a great profusion of dandelion and fruit blossoms here in May and June. The honey-bees scarcely noticed the fruit bloom, but O, goodness, how they everlastingly brought in the honey from dandelion! One colony in a box-hive gathered about 40 pounds in less than ten days, from that source alone. Besides transferring my own bees, I have transferred 22 colonies for other parties, making 31 in all, with good success. My bees are all in a good cellar, and as it is considerably ventilated, I use artificial heat by means of a stove, endeavoring to keep the temperature at about 42° above zero. I find that if it falls much below that, the bees are more uneasy than if it rises some above. I believe if it could be kept at 48°, with plenty of pure air, it would be about right. The 2 colonies obtained from the neighbor are fed entirely on granulated sugar syrup, and are without pollen; one of them was made by uniting 3 colonies, and is a monstrous one. The other is only a nucleus, but not a dozen bees have died from either since putting them into the cellar two months ago. I would say to all who intend to keep bees, to buy a good bee-book, take a good bee-paper, study them thoroughly, get a colony or two of bees, and go ahead.

☞ E. S. Hollingshead, Culloden, Ont., on Jan. 13, 1885, writes thus:

Last May I purchased one colony of black bees, and I have increased them to 7 colonies by employing swarming by division. I Italianized 5 out of the 7. In two instances the queens were virgin queens two days old. I picked the old queens from the frames and placed the young virgin queens on them, at perfect liberty, and in both instances the bees accepted them, and in a few days both were laying. The queens were both Italians, and mated with Italian drones. My bees are now in chaff-hives on the summer stands. I have made many blunders during the season, and have taken no surplus honey, but the pleasure that I have had in the management of my bees, has more than compensated me for my trouble.

☞ Gust Murhard, Portland, Oreg., on Dec. 20, 1884, reports as follows:

The past season has been indeed a very poor honey season in Oregon and Washington Territory, whilst the honey yield of California has been a very abundant one. Oregon and Washington Territory had too much rain, even for web-foot countries, whilst dry California again had had sufficient rain the past season. Oregon and Washington Territory are but poor honey countries anyway, for want of sufficient bee-pasturage. We have no forests of basswood nor fields of Alsike clover yet, nor many other flowers in abundance, which advanced Eastern agriculture and horticulture afford to bees in the Eastern States; and our limited white clover pastures are often frozen out of the ground, when severe sudden frosts catch the ground uncovered with snow. It will be two years before another yield of honey can be expected from white clover, whose bloom has no seed until the second season, and as long as there is no seed in a bloom, neither is there any honey. Our large sage districts in eastern Oregon and Washington Territory are not yet sufficiently settled by bee-keepers for Oregon apiculture to compete with that of California. It is only the wild flowers of the hills and river bottoms with which our bees have to content themselves.

☞ Wm. Morse, Rockford, Ills., on Jan. 2, 1885, gives his report as follows:

I unpacked my 27 colonies of bees on April 16, 1884; 24 of them were in good condition, and 3 were queenless, one of which was robbed the next day. On June 1, I gave one of the 2 remaining, a laying queen, and it produced 69 pounds of honey in one-pound boxes. I gave the other colony a drone-laying queen, and it gave me neither honey nor increase of bees. My 25 colonies I increased to 49 by natural swarming, and I made 3 colonies by doubling nuclei, so that I now have 53 good colonies. I obtained 2,046 pounds of comb honey in one and two-pound sections, and 204 pounds of extracted honey, being an average of 90 pounds per colony, spring count. I sold the honey at home for 10, 12½, and 15 cents per pound, an average of 13¾ cents per pound. On Oct. 15, I packed 27 colonies in chaff on the summer stands, each having 34 to 40 pounds of stores, and on Nov. 5, I put 25 colonies into the cellar, each having 34 to 37 pounds of stores.

☞ N. L. Minor, a deaf-mute bee-keeper of Clarksville, Mo., on Jan. 12, 1885, gives his report as follows:

Last season I took about 100 pounds of honey from 9 colonies. My colonies were weak, or perhaps I would have secured a larger crop. I do not think that a cellar is a good place for wintering bees, as the ventilation is seldom perfect; I prefer to winter my bees on the summer stands.

☞ L. J. Diehl, Butler, Ind., on Jan. 8, 1885, writes:

My 200 colonies of pure, bright Italians were very active to-day. They are strong in bees, and are in the best condition. I have them on the summer stands. I expect wonders from them next season.

☞ Henry Alley, Wenham, Mass., on Jan. 13, 1885, writes:

The weather continues warm. We expected a cold wave this morning, as promised by "Old Prob," but it did not come. It rained hard yesterday, and the thermometer indicates 58° above zero. If bees cannot come through all right, they ought to die, for the weather is more like that of the South than the North.

☞ Thos. Thurlow, Lancaster, Pa., on Jan. 12, 1885, asks the following:

The main thing with bees here, is to have them strong enough in the spring to gather surplus from locust bloom, which is better than the linden here. From what I have read in the BEE JOURNAL, pea-flour candy will start brood rearing early. I would like it in the spring. Do you know where I can get pea-flour?

[Take peas and grind them into flour, will be about the only way to get it.—ED.]

☞ J. M. France, Montrose, Pa., on Jan. 13, 1885, writes thus:

My crop of honey has been very satisfactory the past season. I have 125 colonies of bees all wintering in fine condition. The winter has been very favorable so far, not more than two weeks at a time that the bees did not have a good chance to fly.

☞ I. Muggrage, Lower Salem, O., on Jan. 13, 1885, writes:

In 1882 my neighbor, Mr. C. Haas, gave me a three-frame nucleus of bees. In 1883 I increased them to 5 colonies by natural swarming, and in 1884, I increased them to 10 colonies, and took 250 pounds of honey. Considering the season, I am satisfied with the result.

☞ W. M. Chapel, Kingston, Wis., on Jan. 12, 1885, asks the following questions:

I wish to ask why the standard Langstroth hive is made so much longer one way than the other (18⅜x14)? Why not make them square? Do they not contain more than 2,000 cubic inches? Such long frames seem unwieldy and unhandy. Are long frames any better for the brood than short ones, and more of them?

[After determining upon the best size and shape of frame for all purposes, Mr. Langstroth calculated the number of frames necessary to give 2,000 cubic inches inside the hive—and that determined the shape. Long frames are no better for breeding purposes than short ones—but many good bee-keepers think they are as well.—ED.]

☞ Wm. H. Graves, Duncan, Ills., on Jan. 7, 1885, reports as follows:

The past season has been a very poor one. I had 40 colonies in the spring, increased them to 55, and doubled them back to 51 at the beginning of winter. They are all well supplied with stores on the summer stands. I took about 1,000 pounds of comb honey in sections, and 1,000 pounds of extracted. I find a more ready sale for the comb than for the extracted honey. The most of the comb honey sold at 15 cents per pound, and extracted at 10 cents per pound. I have about 700 pounds of honey on hand.

☞ M. K. Wing, Findley's Lake, N. Y., on Jan. 9, 1885, writes thus about honey-dew:

Some bee-keepers advise the feeding of honey-dew to bees in the spring, to stimulate breeding. I say do not feed it to them at any time. One might as well expect a human being to do well on a diet of castor oil, as to expect bees to do well on honey-dew. I have been experimenting with honey-dew in wintering bees and feeding them in the spring, for 15 years, and I know that it is the chief cause of bee-diarrhea. I have kept bees for over 25 years.

☞ John Yoder, Springfield, Ont., on Jan. 10, 1885, writes as follows:

I have 83 colonies of bees in the cellar, and 9 in a clamp, the latter being packed in close with chaff. They have not had a fly since put in on Nov. 19, 1884. Those in the cellar are, to all appearance, doing well, but are dying a great deal on the cellar floor. I sweep them all up clean every few days, and to-day I took up three heaping quarts of them that died during eleven days. I have nothing but the cloth over them this winter, and the thermometer indicates from 40° to 45° above zero. Last winter I had a heavy cushion over each hive, and I think that they were too warm. On Sept. 12, 1884, I fed all my bees that needed it, and I was somewhat surprise on Nov. 19, when I put them away, to find that they had lost from 8 to 10 pounds in weight. Extracted honey here, now sells at 12½ cents per pound. I sold the most of my last summer's crop at 11 cents per pound, and the comb honey at 16 to 18 cents per pound. There are many bee-keepers who are afraid of over-production, and indeed it seems like it, for so many are going into it; but the home market is not yet half developed, that is, one-half of the people do not eat honey. They seem to think it a luxury, and too dear even at 11 cents per pound. I am well pleased with the changes in the BEE JOURNAL, for the new year. Answers to queries is just the thing; it will give different men's views from different climates. I am too young a bee-keeper to say much about the pollen theory, but I think that when bees are too warm they breed, then they eat pollen, in confinement cannot fly, and then soil the hive and die of disease. At least that is what mine did a year ago. They were piled four deep on the cellar floor, the bottom tier being diseased, and the top was as clean as when they were put in.

Convention Notices.

☞ The Bee-Keepers' Association for the Province of Quebec will meet at 1511 Notre Dame Street, Montreal, on Tuesday, Jan. 27, 1885.

S. B. LA MONTAGUE, Sec.

☞ The second annual meeting of the Seneca County Bee-Keepers' Association will be held in the Engine House at Ovid, N. Y., on Feb. 11, 1885, at 9 a. m. All interested are cordially invited to attend, and make the meeting as profitable as possible. All implements of the apiary sent to the Secretary will be exhibited at the meeting, and will be disposed of or returned as the owner directs.

IRA WILSON, Sec.

☞ The Lake Shore Bee-Keepers' Association will meet at the apiary of Mr. U. E. Dodge, in Fredonia, N. Y., on Jan. 24, 1885, at 1 p. m. All bee-keepers, and those interested in apiculture, are invited to be present.

JOHN BENEDICT, Sec. pro tem.

☞ The Cortland Union Bee-Keepers' Association will hold its next meeting at Cortland, N. Y., on Jan. 27, 1885.

M. G. DARBY, Sec.

☞ The Northeastern Michigan Bee-Keepers' Association will hold its third annual convention on Feb. 4, 1885, at Vassar, Mich. W. Z. HUTCHINSON, Sec.

☞ The regular annual meeting of the Indiana State Bee-Keepers' Association will be held on Thursday and Friday, Jan. 22 and 23, 1885. The meetings will be conducted in the rooms of the State Board of Agriculture, on the corner of Tennessee and Market Streets, in Indianapolis, Ind. It is proposed to make this the most important and interesting meeting of bee-keepers ever held in the State.

FRANK L. DOUGHERTY, *Sec.*

☞ The Willamette Valley Bee-Keepers' Association will hold its second meeting at La Fayette, Oregon, on the third Tuesday in June, 1885. All who are interested are invited to attend. E. J. HADLEY, *Sec.*

☞ The Blue Grass Convention will be held at the Court House, Cynthiana, Ky., on Monday, Jan. 19, 1885. All are invited to attend.

A. M. COX, *Sec.*

☞ The sixteenth annual convention of the Northeastern Bee-Keepers' Association will be held in the City Hall at Syracuse, N. Y., on the 21, 22 and 23 of January, 1885. The executive committee are determined to maintain the high standing and enviable reputation which the Association has justly gained in the past, and at the coming convention they propose to outdo all former efforts. The meeting will surely be the largest and most interesting ever held in America. No bee-keeper can afford to stay at home. All are invited. All implements of the apiary sent to the Secretary, will be properly arrayed to compare favorably with others on exhibition, and will be disposed of or returned, as the owner directs. Reduced rates for board at hotels.

GEO. W. HOUSE, *Sec.*
L. C. ROOT, *Pres.*

☞ It is proposed to hold an International Bee-Keepers' Congress on the World's Exposition Grounds at New Orleans, La., Feb. 24, 25 and 26, 1885. An interesting programme of subjects of great importance to every bee-keeper in America will be presented and discussed. The disposition of our honey product, with a view to secure better prices will be fully considered. At the same time there will be an Exhibit of Bees and Apiarian Supplies. At the time now selected, the Exposition will be at its best, and excursion rates low. The bee-keepers of our country should lay aside business for a week or two, and make every exertion to attend this Convention. Come prepared with facts, statistics and ideas arranged, to take part in its deliberations.

Dr. J. P. H. Brown, Augusta, Ga.
Dr. N. P. Allen, Smith's Grove, Ky.
W. Williamson, Lexington, Ky.
Dr. O. M. Blanton. Greenville, Miss.
P. L. Viallon, Bayou Goula, La.
Judge W. H. Andrews, McKinney, Tex.
W. S. Hart, New Smyrna, Florida.
S. C. Boylston, Charleston, S. C.
H. C. Austin, Austin's Springs, Tenn.
R. C. Taylor, Wilmington, N. C.
J. W. Porter, Charlottesville, Va.
S. Valentine, Hagerstown, Md.

☞ The eighth annual meeting of the Northwestern Illinois and Southwestern Wisconsin Bee-Keepers' Association will be held in Temperance Hall, at Freeport, Ill., on Jan. 20 and 21, 1885. JONATHAN STEWART, *Sec.*

☞ The Mahoning Valley Bee-Keepers' Association will hold its next meeting in the Town Hall at Newton Falls, O., on the third Thursday in January, 1885. The meeting will be instructive as well as interesting. E. W. TURNER, *Sec.*
L. CARSON, *Pres.*

☞ A bee-keepers' society was organized at Rock Elm Centre, Wis., on Dec. 31, 1884, called the "Linwood Bee-Keepers' Association," and will meet semi-annually on the first Monday in May and September. The next meeting will be held at Rock Elm Centre, Pierce County, Wis.

B. THOMSON, Sec.

☞ Do not forget to send for a Binder in which to file your JOURNAL and thus have the full benefit of it during the whole year.

Special Notices.

The Bee Journal for 1885.

To increase the number of readers of the BEE JOURNAL, we believe, will aid progressive bee-culture and help to elevate the pursuit. We, therefore, offer the following

CASH PREMIUMS FOR CLUBS.

$10.00 for the largest club received at this office before Feb. 1, 1885 (either of the Weekly, Monthly, or both); one Weekly counts same as 4 Monthlies.

$5.00 for the second largest; $4.00 for the third; $3.00 for the fourth; $2.00 for the fifth; and $1.00 for the sixth largest club.

Subscriptions for two or more years for one person, will count the same as each year for a different person.

Apiary Register—New Edition.

All who intend to be systematic in their work in the apiary, should get a copy and commence to use it. The prices will hereafter be as follows:

For 50 colonies (120 pages).....	$1 00
" 100 colonies (220 pages).....	1 25
" 200 colonies (420 pages).....	1 50

The larger ones can be used for a few colonies, give room for an increase of numbers, and still keep the record all together in one book, and are therefore the most desirable ones.

☞ For two subscribers for the Weekly BEE JOURNAL (or 8 for the Monthly) for one year, we will present a Pocket Dictionary, and send it by mail postpaid.

☞ We will send sample copies free to all who wish them, or desire to get up Clubs. Now is the time to work for the Cash premiums we offer. A large club for the Monthly can be gotten up in almost every locality.

☞ For $2.75 we will supply the Weekly BEE JOURNAL one year, and Dzierzon's Rational Bee-Keeping, in paper covers; or the Monthly BEE JOURNAL and the book for $1.25. Or, bound in cloth, with Weekly, $3.00; with the Monthly, $1.50.

☞ We want one number of each of the following: Aug. 1866, Feb. 1867, July 1870 and Oct. 1872. Any one having them to spare will please send us a Postal card. We will take the first that offer them, and pay 25 cents each for the 4 numbers.

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and Cook's Manual, latest edition	3 25..	3 00
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Bees and Honey (paper covers).....	2 75..	2 50
Binder for Weekly Bee Journal.....	2 75..	2 50
Apiary Register for 100 colonies	3 25..	3 00
Dzierzon's New Bee Book (cloth)....	4 00..	3 00
Dzierzon's New Book (paper covers)	3 50..	2 75
Quinby's New Bee-Keeping.	3 50..	3 25
Langstroth's Standard Work.....	4 00..	3 75
Root's A B C of Bee Culture (cloth)	3 25..	3 10
Alley's Queen Rearing.....	3 00..	2 75
The Weekly Bee Journal one year and Gleanings in Bee-Culture (A.I.Root)	3 00..	2 75
Bee-Keepers' Magazine (A.J.King).	3 00..	2 75
Bee-Keepers' Guide (A.G.Hill).....	2 50..	2 35
Kansas Bee-Keeper.....	3 00..	2 75
The Apiculturist, (Silas M. Locke) ..	3 00..	2 90
The 6 above-named papers.....	6 50..	6 00

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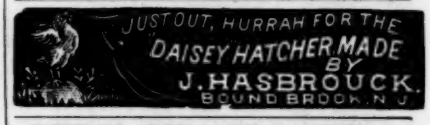

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